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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,014	07/20/2004	Tsukasa Aga	Q82625	8458

23373 7590 10/26/2009

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EXAMINER	
CHEUNG, WILLIAM K	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
10/26/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/502,014	AGA, TSUKASA	
	Examiner	Art Unit	
	WILLIAM K. CHEUNG	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 9-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 9-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the amendment filed March 18, 2009, claims 2-8 have been cancelled. Claims 1, 9-19 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 9-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oharu et al. (U.S. Patent No. 6,610,775) for the reasons adequately set forth from paragraph 4 of the office action of March 24, 2009 .

1. **(currently amended):** An aqueous water- and oil-repellent dispersion comprising:

(A) a homopolymer or copolymer comprising at least one polymerizable compound having a perfluoroalkyl or perfluoroalkenyl group and an acrylate or methacrylate group, or

a copolymer comprising said polymerizable compound and another compound copolymerizable therewith, and

(B) a surfactant which comprises a cationic surfactant and a nonionic surfactant of the formula (I):

$$R^1O[CH_2CH(CH_3)O]_a\text{-}(CH_2CH_2O)_bH \quad (I)$$

wherein R^1 is a branched alkyl including a main chain having at least 5 carbon atoms and three or more side chains, where each of the side chains has at least one carbon atom,

a is an integer of at least 3, and

b is an integer of 10 to 30; and

wherein the weight ratio of the cationic surfactant to the nonionic surfactant is from 0.5:9.5 to 5:5.

11. (currently amended): An aqueous water- and oil-repellent dispersion comprising:

(A) a homopolymer or copolymer comprising at least one polymerizable compound having a perfluoroalkyl or perfluoroalkenyl group and an acrylate or methacrylate group, or

a copolymer comprising said polymerizable compound and another compound copolymerizable therewith, and

(B) a surfactant which comprises a cationic surfactant and a nonionic surfactant of the formula (I):

$$R^1O[CH_2CH(CH_3)O]_a\text{-}(CH_2CH_2O)_bH \quad (I)$$

wherein R^1 is a branched alkyl including a main chain having at least 5 carbon atoms and three or more side chains, where each of the side chains has at least one carbon atom,

a is an integer of at least 3, and

b is an integer of 10 to 30,

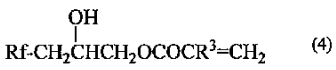
wherein the weight ratio of the cationic surfactant to the nonionic surfactant is from 0.5:9.5 to 5:5; and

wherein the polymerizable compound having the perfluoroalkyl or perfluoroalkenyl group and the acrylate or methacrylate group is at least one compound selected from the group consisting of (meth)acrylates represented by the formulas:

$$Rf\text{-}SO_2\text{-}N(R^1)R^2OCOCR^3{=}CH_2 \quad (1)$$

$$Rf\text{-}(CH_2)_nOCOCR^3{=}CH_2 \quad (2)$$

$$Rf\text{-}CO\text{-}N(R^1)R^2OCOCR^3{=}CH_2 \quad (3)$$



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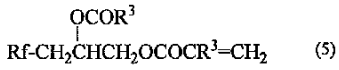

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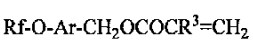

(6)

wherein Rf is a perfluoroalkyl or perfluoroalkenyl group having 3 to 21 carbon atoms,

R^1 is a hydrogen atom or an alkyl group having 1 to 10 carbon atoms,

R^2 is an alkylene group having 1 to 10 carbon atoms,

R^3 is a hydrogen atom or a methyl group,

Ar is an aryl group which optionally has a substituent group, and

n is an integer of 1 to 10.

The prior art to Oharu et al. discloses a water dispersion type water and oil repellent composition comprising a polymer which essentially contains polymerized units of a (meth)acrylate having a polyfluoroalkyl group and polymerized units of a polymerizable monomer which essentially contains a polymerizable unsaturated group and a hydroxyl group (Abstract; col. 4, line 37-65), which appears to meet the instantly claimed component (A) of Claim 1.

$F(CF_2)_5CH_2OCOCR=CH_2$,
$F(CF_2)_6CH_2CH_2OCOCR=CH_2$,
$H(CF_2)_6CH_2OCOCR=CH_2$,
$H(CF_2)_8CH_2OCOCR=CH_2$,
$H(CF_2)_{10}CH_2OCOCR=CH_2$,
$H(CF_2)_8CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_8CH_2CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_8(CH_2)_4OCOCR=CH_2$,
$F(CF_2)_{10}CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_{12}CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_{14}CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_{16}CH_2CH_2OCOCR=CH_2$,
$(CF_3)_2CF(CF_2)_4CH_2CH_2OCOCR=CH_2$,
$(CF_3)_2CF(CF_2)_6CH_2CH_2OCOCR=CH_2$,
$(CF_3)_2CF(CF_2)_8CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_8SO_2N(CH_3)CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_8SO_2N(C_2H_5)CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_8SO_2N(C_3H_7)CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_8CONHCH_2CH_2OCOCR=CH_2$,
$(CF_3)_2CF(CF_2)_5(CH_2)_3OCOCR=CH_2$,
$(CF_3)_2CF(CF_2)_5CH_2CH(OCOCH_3)OCOCR=CH_2$,
$(CF_3)_2CF(CF_2)_5CH_2CH(OH)CH_2OCOCR=CH_2$,
$(CF_3)_2CF(CF_2)_7CH_2CH(OH)CH_2OCOCR=CH_2$,
$F(CF_2)_8CH_2CH_2OCOCR=CH_2$,
$F(CF_2)_8CONHCH_2CH_2OCOCR=CH_2$.

Oharu et al. further teach that the water and oil repellent composition also comprises a cationic surfactant (column 12, line 34-35) and a nonionic surfactant (column 2, line 41) having a general formula of

$$R^{10}O[CH_2CH(CH_3)O]_g\text{-}(CH_2CH_2O)_sH \qquad \text{Formula 5}$$

Wherein R^{10} represents an alkyl group, an alkenyl group or an alkpolyenyl group having a carbon number of 8 or more, s represents an integer of from 5 to 50, and g represents an integer of from 0 to 20 (column 9, line 42-52), and further, the alkyl group, the alkenyl group or the alkpolyenyl group may be of a linear structure or a branched structure. In the case of a the branched structure, a secondary alkyl group, a secondary

alkenyl group or a secondary alkpolyenyl group is preferred (column 9, line 22-28), which appears to anticipate or render obvious the instantly claimed component (B) of Claim 1.

Oharu et als' general formula (Formula 5, column 9) wherein R_{10}, which represents an alkyl group having a carbon number of 8 or more and may be of a linear structure or a branched structure (column 9, line 42-52) are seen to render obvious the limitation of the branched structure to methyl groups and incorporating three or more branches as instantly claimed. One of ordinary skill in the art would readily appreciate the teaching and be able to at once envisage the branched structure to methyl groups and employ three or more branches in the nonionic surfactant within the general formula.

Regarding the claimed "weight ratio of the cationic surfactant to the nonionic surfactant is from 0.5:9.5 to 5:5, Oharu et al. (col. 18, example 1) clearly teach a weight ratio of 1:3, which is within the weight ratio range being claimed.

As to Claims 9-10, a process of producing a water and oil repellent composition and a fiber or fiber fabric treated with the water and oil repellent composition are disclosed at column 26, line 9-12.

Regarding the ammonium compounds of claim 12, Ohara et al. (col. 12, line 24 to col. 13, line 15; col. 18, line 28) clearly disclose a list of ammonium compound as claimed. Ohara et al. (col. 18, line 28) clearly disclose using trimethyl monooctadecylammonium chloride in example 1.

The difference between the invention of claims 1, 9-19, and Oharu et al. is that Oharu et al. do not disclose the specific isotridecyl groups of claim 1.

However, the broad disclosure on the alky chain of the non-ionic surfactants of Oharu et al. (col. 9, line 42 to col. 10, line 11) clearly includes the isotridecyl groups being claimed. Applicants must recognize that Oharu et al. (col. 9, line 53-54) clearly disclose that R^{10} may be of a linear structure or a branched structure. Oharu et al. (col. 9, line 62-63) clearly disclose that the specific compounds disclosed are only used as examples, and are not used to limit the scope of the compound (Formula 5). Motivated by the expectation of success of developing an oil repellent composition capable of imparting excellent heavy rain durability to an object to be treated (col. 1, line 5-16), it would have been obvious to one of ordinary skill in art to recognize that Formula 5 of Oharu et al. would generically include any branched groups having eight carbons or more (which also include the isotridecyl groups as claimed) to obtain the invention of claims 1, 9-19.

Response to Arguments

4. Applicant's arguments filed March 18, 2009 have been fully considered but they are not persuasive. Applicants argue that the amended claims are now allowable because the claims now include the limitations on the weight ratio ranges of the cationic surfactant to nonionic surfactant. However, applicants fail to recognize that Oharu et al. (col. 18, example 1) clearly teach a weight ratio of 1:3 for cationic surfactant/nonionic surfactant, which is within the weight ratio range being claimed. Therefore, the rejection set forth is maintained.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William K. Cheung whose telephone number is (571) 272-1097. The examiner can normally be reached on Monday-Friday 9:00AM to 2:00PM; 4:00PM to 8:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David WU can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/William K Cheung/
Primary Examiner, Art Unit 1796

William K. Cheung
Primary Examiner
October 23, 2009